

Innovative Approaches to Reduce Auto Emissions

Technologies and Innovations That Work

SIP Innovations Conference

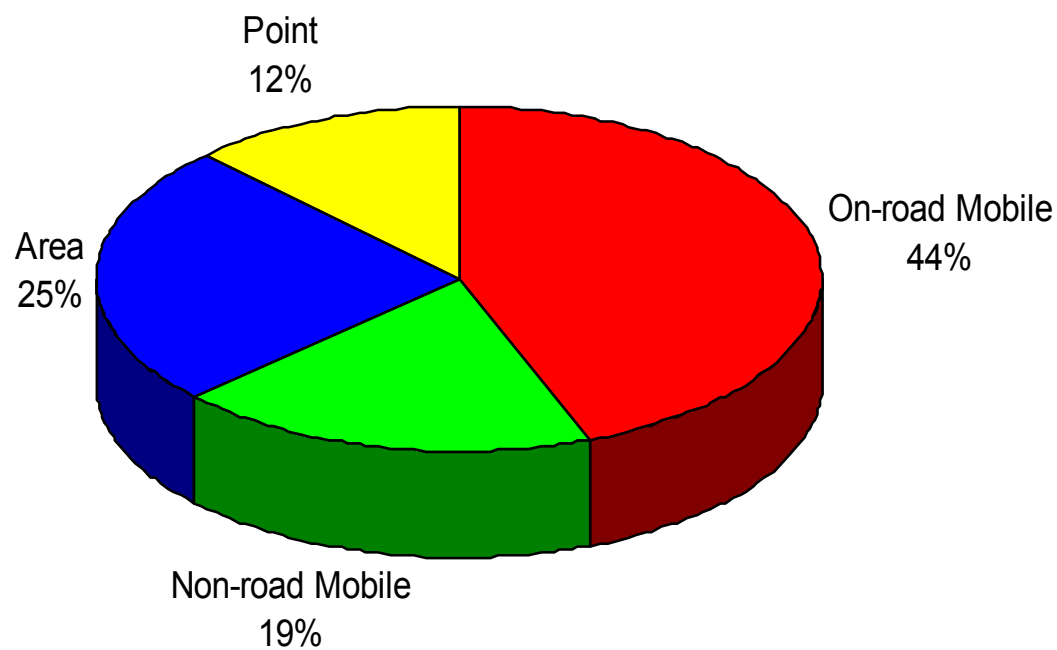
Crystal City, VA

March 12, 2002

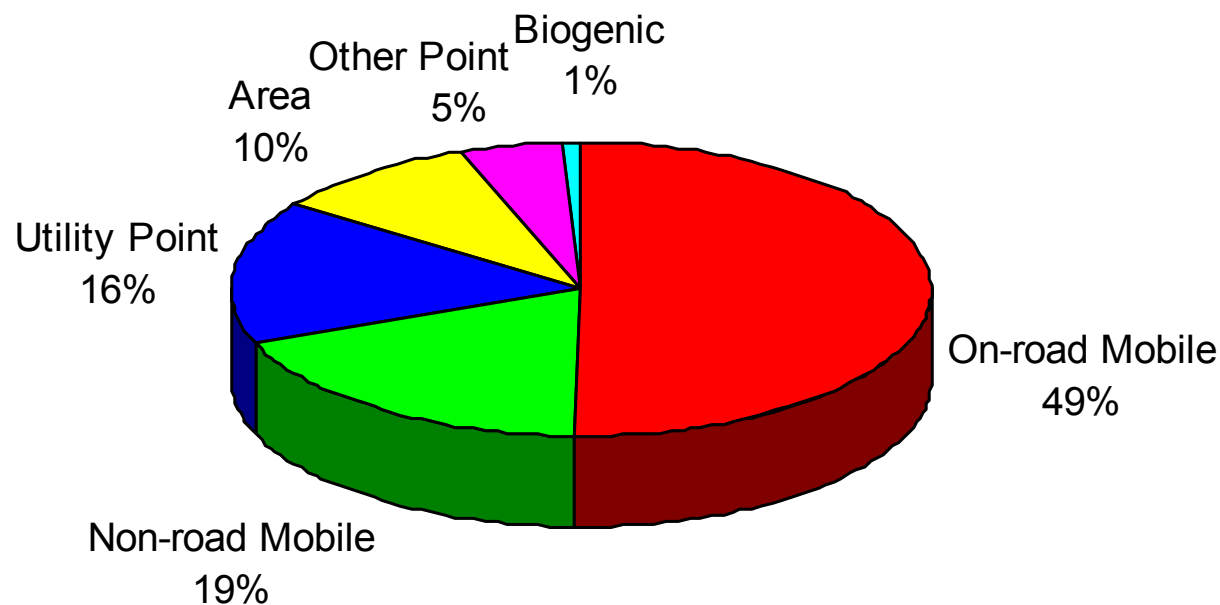
Marlin R. Gottschalk, Ph.D.

Georgia DNR-EPD

1999 VOC Emissions For Atlanta Nonattainment Area, Without Biogenics (416.5 tpd)



1999 NO_x Emissions For Atlanta Nonattainment Area (499.9 tpd)



Emission Sources

- Emissions = Rate x Activity
- Stationary Source
 - Tons per day = pounds/mmBTU x mmBTU/day
- Mobile Source
 - Tons per day = grams/mile x miles/day

Mobile Source Emission Controls

- Rate
 - Engine technology/standards
 - Fuel type/standards
 - In-use controls: inspection/maintenance
- Activity
 - Transportation demand management (travel efficiency)

Transportation Demand Management

- Matching travel demand to mode supply
- Alternatives to Single Occupant Vehicles (SOVs)
 - Personal Travel Pods (PTPs)
- Commute options
 - Carpool
 - Vanpool
 - Transit
 - Telework
 - Compressed work schedule

Atlanta TDM Experience

- 1996 Olympic Games
- EPA's Voluntary Mobile Source Emission Reduction Program (VMEP)
 - Voluntary Ozone Action Program
 - Partnership for a Smog-Free Georgia
 - Clean Air Campaign
- “Framework For Cooperation . . .”
- Attainment SIP
 - NO_x and VOC emissions reductions
 - Measurement

TDM Quantification

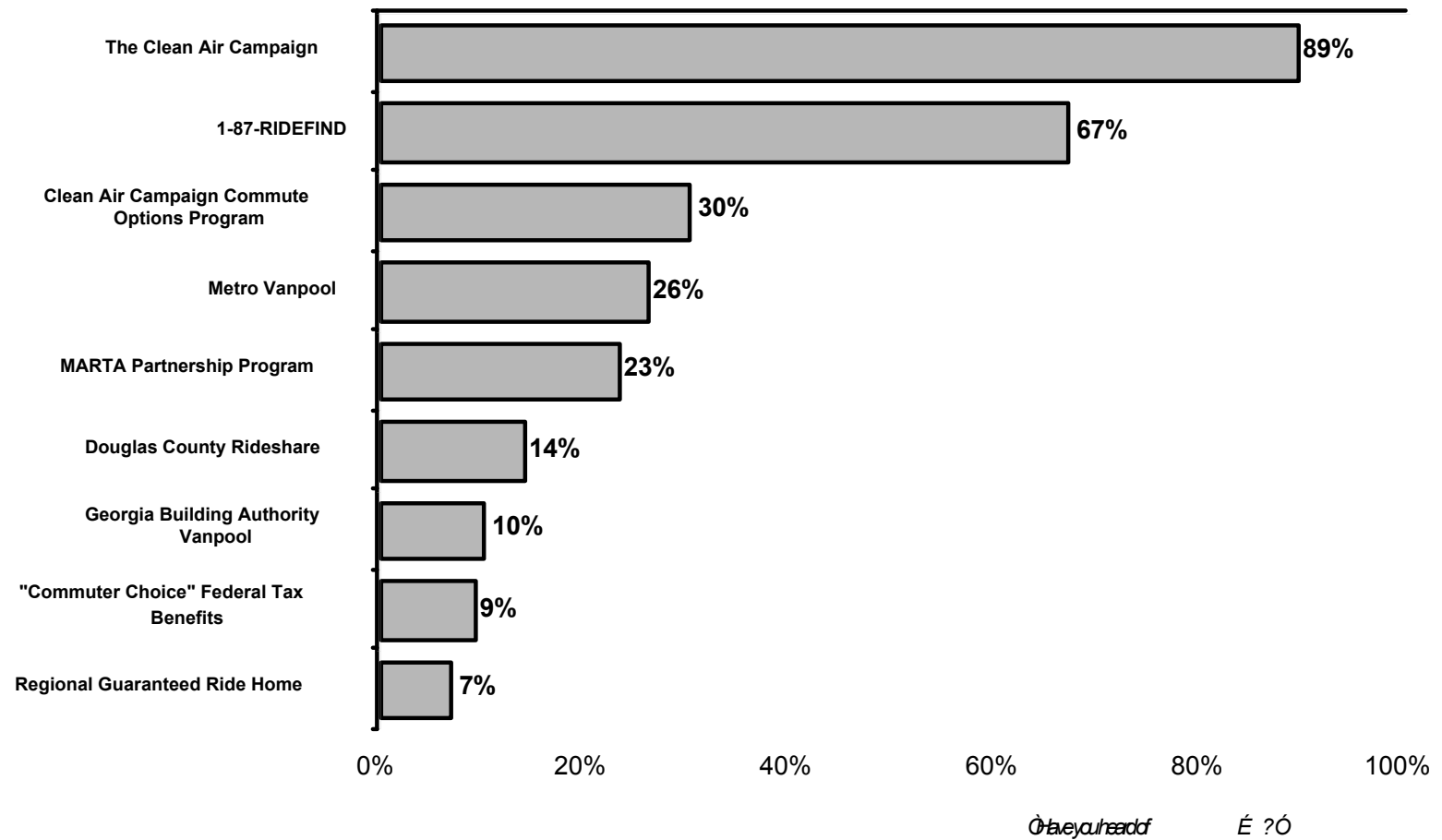
- Measuring travel that does not occur
- Baseline is critical
 - VMT
 - Mode splits
- Independent consultant
- Credit issues
 - Competition for limited funding

TDM Measurement

- Evaluation of the Effectiveness of Programs Contained in the “Framework For Cooperation To Reduce Traffic Congestion and Improve Air Quality”, Phase 2, FY2001 Final Report
- Social marketing
 - Increase awareness
 - Change attitudes
 - Encourage participation
 - Ensure satisfaction
 - Encourage utilization
 - Generate impacts

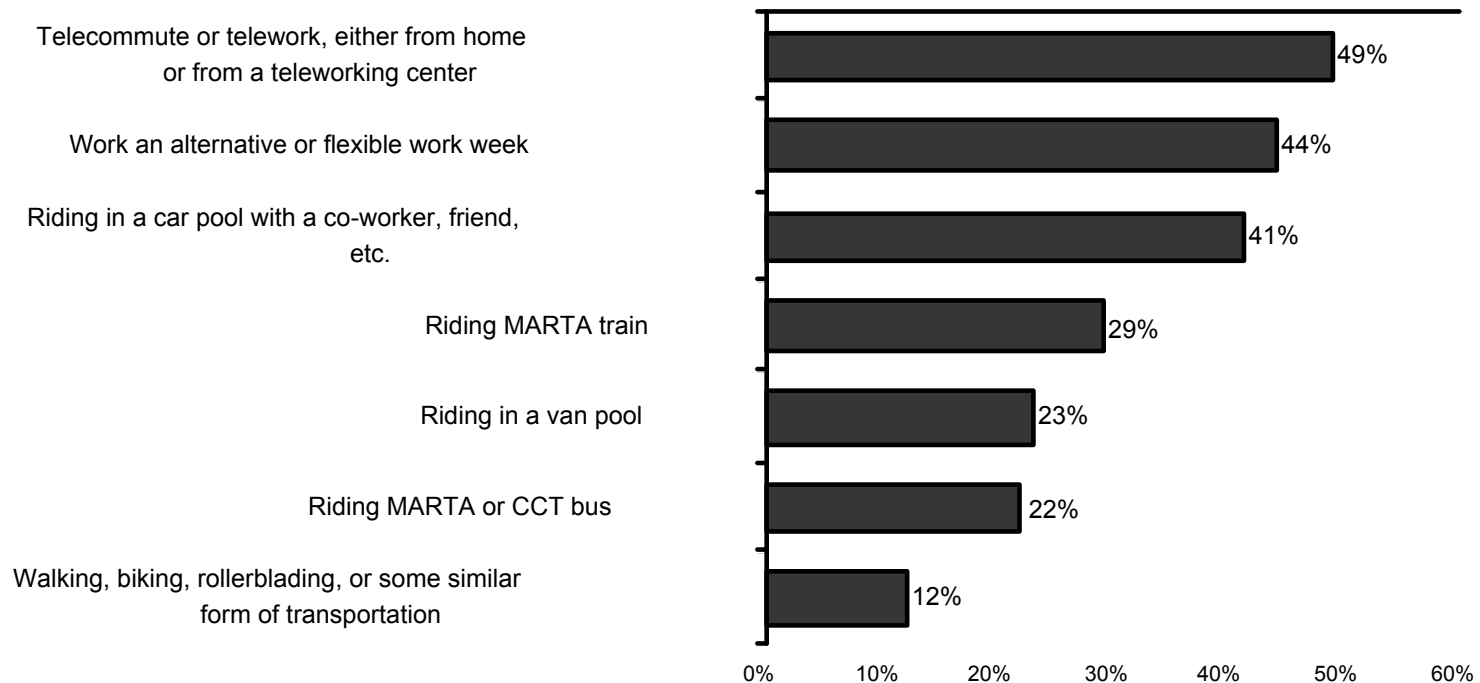
Increased Awareness

Aided Awareness of Area Programs



Change Attitudes

Total Likely to Use Means of Transportation At Least Once Per Week for Commute

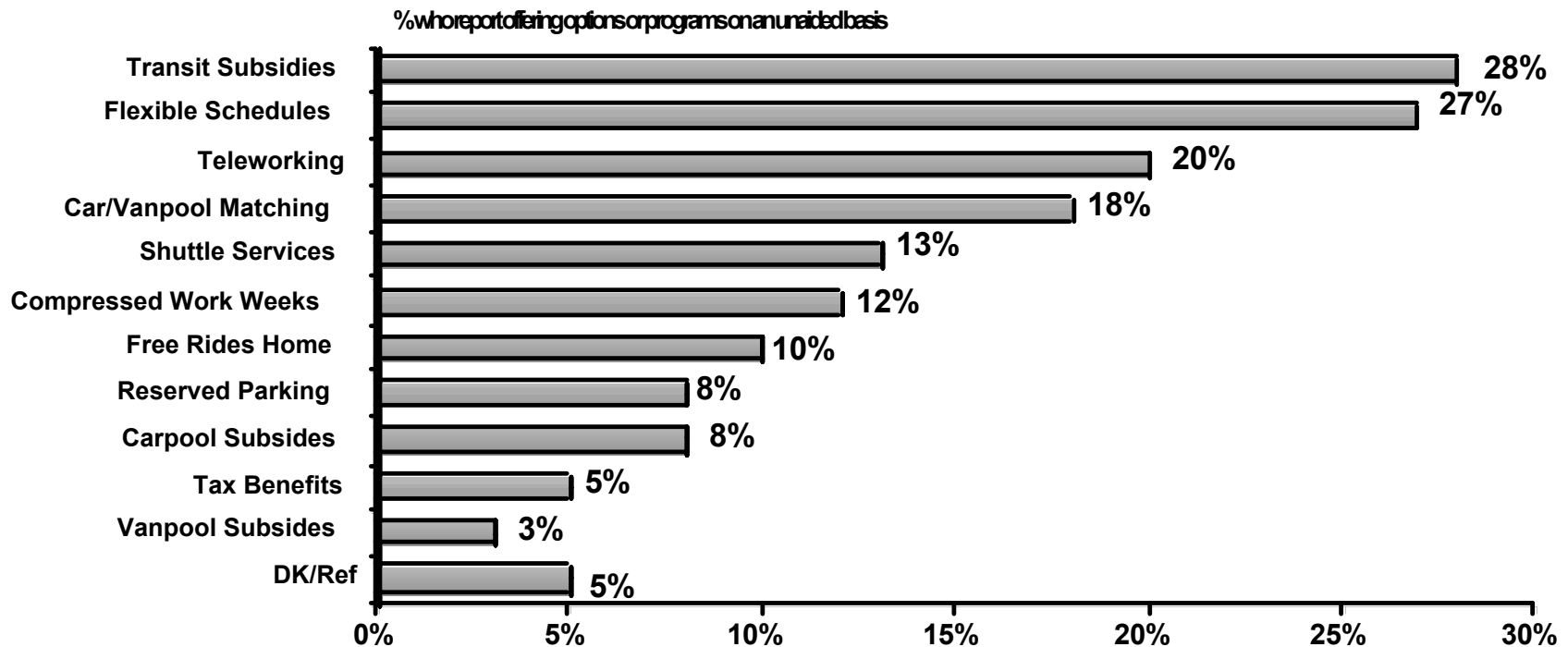


(n=1,104 employees)

Excludes how many bus or subway means of transportation used at least once per week for commute and for work school

Encourage Participation

Commuting Programs Currently Offered** (Unaided)



Can you describe the programs or incentives your company offers to employees? Do you offer any other commuter transportation programs or incentives?

*NOTE: The percentages who offer specific programs is based on 20% of respondents who say they offer programs

Ensure Satisfaction

Employer Outreach	Satisfied, Good	Very Satisfied, Excellent
Trans events	47%	50%
Partner meetings	12-35%	65-70%
Marketing materials	4%	50%
Smog alerts	-	58%
Awards/Recognition	62%	30%

TDM Utilization

- Trips eliminated, VMT reduced
- TDM program participation
 - Employer records/reports
 - Rideshare databases
 - Transit and vanpool subsidies
- Collateral participation (not in Phase 2)
 - Regional surveys

Encourage Utilization

Commuter Placements/Users	Net Total by Program/Service		
	New Users	Retained Users	Total Users
Carpool	1,250	1,740	2,990
Vanpool	736	1,986	2,722
Transit	10,330	5,739	16,069
Compressed work week	158	19,791	19,949
Telework	906	6,587	7,492
Total	13,380	35,842	49,223

Generate Impacts

Net Vehicle Trips Reduced	New users	Retained users	Total users
Carpool	668	427	1,095
Vanpool	905	1,339	2,244
Transit	12,743	7,079	19,822
CWW	46	5,808	5,855
Telework	897	4,299	5,195
Total	15,259	18,952	34,211

Generate Impacts

Net VMT Reduced	New users	Retained users	Total users
Carpool	11,288	7,211	18,499
Vanpool	31,633	42,280	73,913
Transit	147,943	82,191	230,134
CWW	677	84,801	85,478
Telework	8,247	60,008	68,255
Total	199,788	276,490	476,278

NO_x Emission Reductions

Impacts (kg/day)

Net Emissions Reduced	New users	Retained users	Total users
Carpool	12.60	8.11	20.71
Vanpool	31.45	58.94	90.39
Transit	123.50	68.61	192.10
CWW	0.75	94.26	95.01
Telework	10.83	78.79	89.63
Total	179.13	308.71	487.84

VOC Emission Reductions

Impacts (kg/day)

Net Emissions Reduced	New users	Retained users	Total users
Carpool	13.90	8.95	22.85
Vanpool	34.70	65.03	99.73
Transit	136.26	75.70	211.95
CWW	0.83	103.32	104.15
Telework	11.95	86.93	98.89
Total	197.64	339.93	537.57

Next Steps

- Phase 3, FY2002 – due in Spring 2003
 - More robust databases
 - Collateral participation
 - Regional surveys
 - Employer surveys
- Next phase: Continued improvement
- SIP progress
- Mid-course corrections